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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,984	11/19/2001	John T. Moore	303.779US1	9535

7590

08/22/2003

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EXAMINER

PHAM, THANH V

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 08/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,984

Applicant(s)

MOORE ET AL. *mu*

Examiner

Thanh V Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-108 is/are pending in the application.
- 4a) Of the above claim(s) 18-39, 44-94 and 97-108 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 11, 14, 41 and 43 is/are allowed.
- 6) ☒ Claim(s) 1, 4-5, 7, 9-10, 12, 15, 40, 42 and 95 is/are rejected.
- 7) ☒ Claim(s) 2, 8, 13, 16, 17 and 96 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 05/20/03 was filed after the mailing date of the Office Action on 04/04/03. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

2. Applicant's arguments filed 07/07/03 have been fully considered but they are not persuasive.

3. In response to the argument on the properties of the first layer of conductive material (the remark's page 2, second paragraph), claims 4's first layer which is a metal that adheres to any oxide layer and claim 5's second layer which is a metal that is diffusible/bonds into any oxide seem to be redundant claims. Therefore, it is suggested that these claims are canceled.

4. Applicants argue that the Dalton reference does not have a binding layer and the Dalton's liner is not the binding layer referred to Dalton's paragraph 51 wherein the suitable materials (Dalton's TiN, TaN, Ti, Ta, W, WN, Cr, Nb and other like materials) of the liner are disclosed. It is not necessary for Dalton to state that liner is binding. The inherent characteristic of those high binding energy materials has been well known in

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the art at the time the instant invention was made. (US 6,184,477 B1's col. 16, line 44 – col. 17, line 7, named as one example with explanation using the same term "binding".)

Response to Amendment

5. The amendment of claims 2, 11 and 17 and cancellation of claim 3 are sufficient to overcome the objection and a rejection under 35 USC 112, second paragraph.

6. Page 3 of the Amendment filed 7/07/03 rewrite claim 5 as:

5. *(Original) The electrode structure of claim 1, wherein the second layer is a metal that is diffusible into an said oxide and bonds to an oxide.*

The actual original does not have "said" in front of "oxide". It is assumed that there is no "said" in the original claim 5.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 4-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The term "an oxide" in lines 2 of claims 4 and 5 is relative term which renders the claim indefinite. The term "an oxide" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In this instant, it is not clear where an oxide is. Further, "an oxide" is recited twice in claim 5 could be

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understood that there are two layers of oxide formed thus what oxide that the first layer of conductive material would diffuse/bond to.

10. Claims 1, 7, 9-10, 12, 15, 40, 42 and 95 are rejected under 35 U.S.C. 102(a) as being anticipated by Dalton et al. US 2002/0145200 A1.

The Dalton et al. reference discloses an electrode structure comprising: a first layer 10 of conductive material [0031]; a dielectric layer 12 formed on a surface of the first layer; an opening 24 formed in the dielectric layer to expose a portion of the surface of the first layer, fig. 1E; a binding layer 26 formed on the dielectric layer and on the exposed portion of the surface of the first layer, fig. 1F; and a second layer 28 of conductive material formed on the conductive binding layer.

The electrode structure is applied in integrated circuit which is inherently supported by the substrate of a semiconductor die, col. 1, lines 4-7.

Allowable Subject Matter

11. Claims 6, 11, 14, 41 and 43 are allowed.

12. Claims 2, 8, 13, 16-17 and 96 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

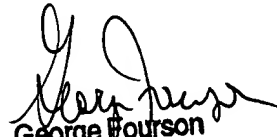
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh V Pham whose telephone number is 703-308-2543. The examiner can normally be reached on M-T (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TvP
July 30, 2003


George Fourson
Primary Examiner